

Mumbai University

May - 2018

B.Sc.IT: SEMESTER – V

(QUESTION PAPER)

[IDOL – Old Course]

INTERNET SECURITY

Time: 3 Hours**Total Marks:** 100**N.B.:** (1) Question No. 1 is Compulsory.

(2) Attempt any four from Question Nos. 2 to 7.

(3) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

(4) Answer To The Same Question Must Be Written Together.

(5) Number To The Right Indicates Marks.

(6) Draw Neat Labeled Diagrams Wherever Necessary.

Q.1 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) Why do we need Security? Discuss. (5)
- (B) Write note on Incident Handling. (5)
- (C) What is Security Policy? Who is involved in formation of Security Policy? (5)
- (D) Explain the Caesar Cipher Scheme with an example. How to break Caesar Cipher? (5)

Q.2 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) You are assigned the job of system administrator of a company. Explain how you will try to secure your network from the following that pose a threat to the security. (8)
- (i) Viruses
- (ii) Hackers
- (iii) Employees
- (iv) Cookies
- (B) What are the different types of Viruses? Explain the structure of Viruses. (6)
- (C) What Firewalls can do? What Firewalls cannot do? Where should we implement the Firewall? (6)

Q.3 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) State and explain different Security Models. (8)
- (B) Write a note on Digging of Worms. (6)
- (C) Discuss in detail the classification of Attacks. (6)

Q.4 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) Discuss in detail Risk Analysis. (8)
- (B) What do we mean by Proxy Servers? Explain their working in detail. How are they different from Circuit Gateways? (6)
- (C) Write a note on Botnets. (6)

Q.5 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) What is the difference between the substitution cipher and transposition cipher? What will be the output of the following plain text if we use Caesar Cipher to encode it? (8)
- "Social Engineering"
- (B) What are bugs and backdoors? What prevention mechanism can be used for them? (6)
- (C) Explain in general working of Digital Signatures. (6)

Q.6 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) Write the Diffie-Hellman Key Exchange algorithm and explain it in brief. Alex and Bob want to establish a secret key using this algorithm. (8)
- Given:** $n=11$, $x=2$, $y=3$. Find the values of secret key (K_1 and K_2)
- (B) What are the different ways of sniffing the password? How password sniffing can be avoided? (6)
- (C) Explain the concept of filtering by service with respect to TELNET. (6)

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Q.7 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)

- (A) Define Message Digest. Write any one Message Digest Algorithm. (8)
- (B) What is meant by Public Key and Private Key in Cryptography? What is Encryption and Decryption of Message? What is there importance in transmitting information over the Network? (6)
- (C) Explain what you mean by Plain Text, Cipher Text, Encryption and Decryption. (6)
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